

Fish & Game
TODAY

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Delving into the Abyss




**Story and Photos
by
John Ugoretz
Marine Region**

IT IS A UNIQUE EXPERIENCE TO VENTURE TO THE BOTTOM of the ocean, especially in areas far deeper than the limits for scuba divers, around 120 feet. As a marine biologist, I was part of a Department of Fish and Game group that had the opportunity to do this in November on board the *Delta*, a two-person submersible that is used for marine research as well as treasure hunts and exploration of sunken ships. The dives occurred around the Channel Islands, off Santa Barbara, in recently adopted Marine Protected Areas.

We joined the staff from the Channel Islands National Marine Sanctuary and scientists from the University of California in a preliminary effort to conduct baseline characterization of the protected areas. Over the course of four days we dove 20 times in the *Delta* to depths between 250 and 1,000 feet to observe fish, invertebrates, and habitats. The research is part of a cooperative effort between the Department and the Sanctuary to develop an ongoing monitoring program.

The Sanctuary commissioned the *Delta* to conduct initial dives in the deeper waters of the protected areas. The submersible was supported by the *Velero 4*, a Seattle-



and sealed, and outside noises became muted. As we were hoisted into position there were a few bumps against the *Velero 4* before we were lowered into the waves. Almost immediately I felt the steel walls cool from the ocean's chilly temperature on the other side.

On my first dive the pilot calmly explained the safety features. "If something happens to me," he said, "open these valves then pick up the microphone and say, 'We're coming up, we're coming up, we're coming up.'" It seemed simple enough until I considered we might be 500 feet below the surface when *something* happened.


Shortly however, troubling thoughts disappeared as the sub began its descent into the dark green abyss. It felt a little like being in an elevator going down – only with a window to the sea. I watched as various jellies passed by the porthole, and noticed the light slowly fade. In just a little while all sense of motion was gone and we were suspended in a world of late

based privately owned research ship which has worked with the *Delta* off the California coast since October.

Diving in the *Delta* was a little like being in a fish bowl looking out. As I wiggled my way into the cramped interior, visions of canned sardines flashed through my mind. Inside, I familiarized myself with the sub's three video cameras and recording system that would catalogue our observations. The identifications and images would later be analyzed and linked to the sub's underwater position. Still, during my first time inside, I was surprised at the sub's basic technology. While it's capable of traveling to exceptional depths, I realized it's essentially a steel tube with fins and a propeller. The idea left me somewhere between a settling comfort and mild panic.

Inside the *Delta*, the pilot sits upright, his torso girded by the sub's conning tower. He views the underwater world through surrounding portholes. My location as the observer was just underneath the pilot, and any notion of comfort was quickly squelched. My vision came through a set of forward and side portholes, requiring me to twist and bend for the best view. Though I leaned on a pillow to cushion the hard steel, only a yoga expert could be truly comfortable.

With preparations completed, the *Delta's* hatch was closed



Previous page: A copper rockfish comes in for a closer look and is caught by one of the *Delta's* underwater cameras. This page: A pair of flag rockfish appear undisturbed by the presence of the underwater submersible.

twilight. There's very little talking between observer and pilot. My attention switched to the large depth gauge and I marked the point where we dropped past 200 feet. I'm an experienced scuba diver but I realized this was now by far my deepest dive. Soon, the pilot forced air to the buoyancy chambers to slow our descent. Moments later, we settled on the flat mud bottom with a gentle thud.

Life began to appear in the headlights. On the mud flats I saw basket stars and sea pens waving in the current. The ocean beyond our lights was colored in dark greens and inky blues. At five minute intervals, the crew from the *Velero 4* radioed to ask for our depth and the type of bottom we were over. The pilot answered, "One hundred meters, flat sand with rock outcropping." Wherever there are rocks, we discover fish. Mostly they were small rockfish, flatfish, and other deepwater species. Occasionally we encountered larger fish, including vermillion rockfish, bocaccio, and lingcod. The pilot glided the craft silently over the reefs and sand and I fell into a pattern of calling out the fish I saw, naming the species and the size. The information was recorded on the video and audio tapes and would be added to the growing list of survey data.

The purpose of the joint exercise with the Sanctuary was to conduct fish and invertebrate counts and characterize the types of habitat seen. Along with the *Delta's* array of lights and cameras was a pair of lasers, set at 20 centimeters (about 8 inches) apart. The lasers gave a reference to measure fish against, making estimates more accurate. Each dive took about an hour, and we covered up to a half mile along the bottom. We surveyed areas both inside and outside the new protected areas.

In October, after years of discussion, the California Fish and Game Commission formally created the largest network of



One of many sponges that could be seen from the portal of the *Delta*. Photo inset: Preparing for the abyss as the *Delta* is lowered from the *Velero 4*, a Seattle-based privately owned research ship which has worked with the *Delta* off the California coast since October.



marine reserves off the West Coast when it set aside 132 square nautical miles (175 square miles) within the Channel Islands National Marine Sanctuary. The dozen areas within the network – where fishing is prohibited – will allow the restoration and preservation of marine populations for future generations. The creation of the marine reserves establishes “safe zones” to reverse the alarming drop over the past decade in the population of several marine species that were once plentiful off the California coast.

Each dive in the *Delta* held its own surprises, its own mysteries. One of the scientists photographed a kitchen sink on the ocean bottom. Yet another in a different sector of exploration spied a lingcod that appeared to be sitting on a discarded chair – perched perfectly upright on the bottom. During one of my transects, I saw a beer bottle and dutifully called out, “Bud, 20 centimeters.”

Just before we began our ascent, my pilot called “Sixgill



A halfbanded rockfish makes its way along the ocean bottom. Above photo: The view may be terrific from 1,000 feet below the surface but the accommodations are less than spacious aboard the tiny *Delta*. Below photo: A purple hydroid.



shark.” He swung the sub around and we were treated to several minutes of the six-foot long shark swimming alongside.

The return to the surface came all too soon. We popped up like an air bubble a short distance from the support ship, and bobbed in the waves as it approached. In short order, we were raised from the water and secured on the *Velero 4*’s deck. My ears popped as the hatch was opened and I slowly crawled out, stretching and rubbing my aching legs.

Detailed maps and video tapes of each dive and the fish and invertebrate counts are being analyzed to gather important data on the numbers and sizes of animals, and the types of habitats encountered. The data, combined with information collected previously, will be used to characterize changes in species composition, size, and distribution. Ongoing cooperative research will provide needed information about how fish populations change within the new MPAs.



The *Delta* surfaces after one of its research missions around the Channel Islands in waters recently adopted as Marine Protected Areas. Tallying the fish, clockwise from above: Lingcod; a rockfish brushes across a sponge that serves as neighbor to a starfish; a bocaccio.

Salmon Festival's 'Schools Day' Spawns Youth Creativity

*By Sylvia Gude
Conservation Education/Enforcement
Branch*

They're almost here! The buses are entering the parking lot. This is it! Are we ready? Have we thought of everything? We're about to find out!

Nearly 200 excited fourth-graders arrive at Nimbus Flats/Lake Natoma for the sixth annual American River Salmon Festival Schools Day event. The excitement is contagious, and soon we're busy organizing classes, passing out schedules, and getting the students started on the day's activities – all focused on the King – Chinook salmon that is.

After the initial rush of activity, things calm down a bit and my thoughts go back almost a year ago to when the Schools Day subcommittee began planning this event at four separate Sacramento County sites. In February, the subcommittees will again begin planning for next season's festival.

The subcommittee decided the best way to get teachers interested was to continue the six-year tradition of the first festival: Offer an art contest to involve students early in the year and motivate teachers to sign up for the October field trip. In February, fourth-grade teachers receive art contest rules and helpful hints encouraging student creativity to develop artwork featuring Chinook salmon in their natural habitat. The winning entry would be featured on the Salmon Festival poster.

Last year by the April deadline, we had 29 entries from 11 schools. The subcommittee members selected a student from Citrus Heights Elementary School as the 2002 grand



A fourth-grader's winning entry for the next Salmon Festival poster

prize winner. Her colorful drawing of Chinook salmon swimming along the stream bottom created an impressive image for the festival poster. The winner received a certificate of recognition, a savings bond, and the American River Salmon Festival T-shirt. Two subcommittee members traveled to the school for a celebration honoring the young artist and she was presented a framed portrait of the King.

At the Nimbus Hatchery, my thoughts are interrupted by the sound of exuberant children moving from one activity to another. They spend the morning participating in six learning

stations, each featuring a different aspect of the Chinook salmon's incredible journey from streams to ocean and back again. Stations include fish anatomy, "Streamside Jeopardy," the Project WILD "Hooks & Ladders" activity, a nature walk, and water quality investigation. It's a great way for children to learn in a local "outdoor classroom," gain an appreciation for the river, and recognize the importance of protecting fish, wildlife, and habitat.

For more information about the October American River Salmon Festival, please check out the website at www.SalmonFestival.net.

CSECC Chair Pens Letter of Thanks for Employees' Giving During Contribution Drive

Capital Region's State
Employees' Charitable
Campaign reached
\$42,000 in pledges,
surpasses expectations

Dear Co-workers:

In spite of the economy's downward turn and gloomy rumors of budget reductions, Department of Fish and Game employees in the Sacramento region have been giving generously of their hearts, time, and wallets.

This year's State Employees' Charitable Campaign (Capital Region) surpassed expectations with more than \$42,000 pledged for 2003 by Department staff. The United Way will distribute this money to the throngs of non-profit organizations such as Loaves and Fishes, the Alzheimer Aid Society, the Nature Conservancy, One Hundred Black Men of Sacramento, the Leukemia & Lymphoma Society, WEAVE, Firefighters Pacific Burn Institute, Habitat for Humanity, Oak Park Preschool, and so many more community-building agencies.

Donations have not stopped with the Campaign. Employees are responding enthusiastically to food- and coat-drives, and so many of you give privately as well.

Your values are demonstrated by your deeds: through your work, your families, and your charitable concern for others whom you may not even know. While you expect no thanks for gifts you offer so humbly, I must take this opportunity to applaud your selflessness. You make this world a better place.

Thank you,
Angela Barlow,
CSECC Department Chair

P.S. When you get the chance, please take a moment to acknowledge your fellow employees who helped to organize this year's amazing effort: Sandy Daniel, Fish and Game Commission; Robert Long, Executive Office; Carmen Cua, Audits Branch; Paula Elledge, Legal Office; Winona Thompson, License and Revenue Branch; Gregory Farmer, Business Services; Beth Jarvis, Habitat Conservation Division; Robin Hughes, Wildlife Programs Branch; Margie Bowe, Fisheries Programs Branch; Leslie Laurance, Conservation Education and Enforcement Branch; Sue Damron, Office of Spill Prevention and Response; Kerry Wicker, Region 2; Robin Loessberg, Fiscal and Administrative Services Branch; Ivan Jackman, Human Resources Branch.

WCB Recognizes Sarro, Woodward



After 30 years of state service, the Wildlife Conservation Board's Jim Sarro, left, assistant executive director for land acquisition, announced his retirement. At an impromptu celebration, he is joined by several members of the WCB staff, including Al Wright, executive director, center.

Photo by Scott Clemons



Wildlife Conservation Board budget officer Roxanne Woodward, right, is congratulated by Al Wright, the WCB's executive director, at her 25 years of state service celebration. Woodward received her award at the WCB office on Nov. 22, 2002.

Photo by Scott Clemons



Commendation for Marine Region's Aldrich

Marine Region Warden Bob Aldrich, a 23-year veteran with the Department, received a Letter of Commendation recently during a squad training session. Capt. Dennis Davenport presented the award for Aldrich's dedicated efforts on a year-long investigation of party boat violations in Bodega Bay. Aldrich's initiative and persistence resulted in several felony charges being filed against the skipper/owner of the boat by the Sonoma County District Attorney's Office. Aldrich also maintained a high case load in his assigned area while conducting the investigation. Aldrich is to be commended for his outstanding work on the investigation and his continuing efforts in his district, Davenport said.

A photograph of a sunrise over the ocean. The sun is low on the horizon, creating a bright orange and yellow glow that reflects on the water. The sky is a mix of blue and orange, with some clouds. The ocean is dark blue with white-capped waves. The text "Happy New Year" is written in a red, cursive font with a white outline, positioned in the lower right quadrant of the image.

Happy New Year

Dawn off San Miguel Island

**Photo by
John Ugoretz**